

TORREYA

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NOTES ON SOUTHERN VIOLETS—II

BY HOMER D. HOUSE

In Small's Flora of the Southeastern United States, Mr. Pollard, who has contributed the treatment of the Violaceae, does not credit *Viola cucullata* Ait. to this region. This species does however occur in this region and is represented by two rather distinct forms. Applying to them the key for the species of *Viola* in Small's Flora places them under *V. papilionacea* Pursh, as described by Mr. Pollard. *Viola papilionacea* is of a different group of species from *V. cucullata* and is recognized by its horizontal or ascending cleistogamous flowers on short peduncles, developing into short, blunt capsules, the sepals of the petaliferous flowers never with the prominent basal auricles of *V. cucullata*. In fact, *Viola cucullata* has more in common with *V. Brittoniana* than with any other species. Professor Greene* recognizes more than one species in the *V. cucullata* of recent manuals and, of these, *V. macrotis* is very distinct from the common form of *V. cucullata* in leaf character and habitat. In the southern Appalachian mountains it is the commonest representative of the group, while in the wet places along streams of the Piedmont region adjacent to the mountains another species is found.

VIOLA MACROTIS Greene, Pittonia 5: 97. N 1902.

Leaves of the summer foliage with pale-green, subsucculent blades, broadly ovate, acute, shallowly cordate, crenate-dentate, 6-10 cm. long and frequently broader, slightly pubescent on the veins beneath and on the peduncles: petaliferous peduncles exceeding the leaves until well after the flowering period: cleis-

* Pittonia 5: 96-101. N 1902.

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FIGURE 4. *Viola oconensis* House; *a*, plant, nat. size; *b*, a lateral sepal, $\times 4$; *c*, an upper sepal, $\times 4$; *d*, detail of petals, nat. size.

togamous flowers erect on shorter peduncles, and the subsequent capsules 10–14 mm. long, angled and acute.

Moist shady stream banks and around springy places in the deeper coves of Rabun Bald, Rabun Co., Georgia, alt. 2000–3500 ft. *H. D. House*, 2296, June 1–4, 1906.

***Viola oconensis* sp. nov.**

Related to *V. cucullata* of the north. Rootstock ascending, branched, often elongated: early leaf-blades round-ovate, shallowly cordate, obtuse, crenate, 1.5–3.5 cm. long, glabrous: summer foliage appearing with the flowers; petioles 8–15 cm. long, slender, pale and glabrous or with a few scattered hairs; blades oblong-ovate in the earlier leaves to triangular-ovate in the later ones, 4–5 cm. long, 2–3.5 cm. broad, acute to sub-acuminate, deeply cordate and cucullate at the base, crenate or crenate-serrate, bright-green, rather thick and firm in texture, the veins prominent beneath, hispidulous above with minute whitish scattered hairs or glabrous with age: peduncles mostly exceeding the leaves at all stages, glabrous or slightly pubescent, 10–30 cm. long, bracts minute, subulate, not opposite: sepals linear-lanceolate, long-pointed, with whitish margins, 10–14 mm. long, the basal auricles prominent, blunt, the auricles and sometimes the margins of the sepals with a few short cilia: corolla 2–3 cm. broad, bright-blue but not purplish, the upper and lateral petals broad and rounded, the lower petal lance-oblong, obtuse and conspicuously veined with purple, the lateral pair bearded with small tufts of white papillae: cleistogamous flowers acute, erect on peduncles 8–20 cm. long, their capsules about as long as the sepals, acute. [FIGURE 4.]

In swampy thickets of elder and smilax along a small "branch" near Clemson College, Oconee Co., South Carolina, *H. D. House*, 1839, April 16, 1906, alt. about 800 ft. (type in the Clemson College herbarium; duplicate types in the herbaria of the New York Botanical Garden and the National Museum). Near Pendleton (but in the S. E. corner of Oconee Co.) *H. D. House*, 1801, April 10, 1906.

At the last-named locality *V. sagittata* Ait. was abundant on an open wooded slope above, and around the margin of the swampy thicket in which grew *V. oconensis*, occurred several plants of intermediate appearance.

***Viola oconensis* × *sagittata* hyb. nov.**

The early leaves with deltoid-ovate blades similar to those of *V. emarginata*, the later leaf-blades lanceolate-oblong, showing at the base both cucullate and sagittate characters; slight traces of pubescence often found on the upper leaf surfaces and peduncles: the flowers large, 2–3 cm. broad and purplish-blue; petaliferous flowers apparently not developing capsules, the peduncles withering soon after flowering: cleistogamous flowers numerous but their capsules small and abortive.

Low meadows, bordering swamps in which occurs *Viola oconensis*; near Pendleton (but in Oconee Co.) South Carolina, *H. D. House*, 1804, April 10, 1906.

The extent of my field studies thus far shows that this region is no exception to those localities already studied by the writer in regard to the abundance of natural hybrids among the violets. Many forms are under observation and the hybrids thus far detected are as follows:

Viola emarginata × *sagittata* Brainerd, Rhodora 8: 58. 1906.

Tomassee, Oconee Co., *H. D. House*, 2026, May 5, 1906.

Viola emarginata × *papilionacca* House, Rhodora 8: 120. 1906.

Open coves at limit of cultivation, Rabun Bald, Rabun Co., Georgia, *H. D. House*, 2254, June 1–4, 1906.

Viola palmata × *villosa* Brainerd, Rhodora 8: 56. 1906.

Open woods with *V. palmata* and *V. villosa*, near Clemson College, Oconee Co., South Carolina, *H. D. House*, 1930, April 25, 1906.

Viola affinis × *villosa* Brainerd, Rhodora 8: 56. 1906.

Near Clemson College, Oconee Co., S. C., *H. D. House*, 2357a, June 15, 1906.

CLEMSON COLLEGE, SOUTH CAROLINA.

NOTES ON SOME FERNS COLLECTED NEAR ORANGE, NEW JERSEY

BY RALPH CURTISS BENEDICT

The ferns under consideration were collected on a trip with the Torrey Botanical Club on June 22, 1907. The route lay over part of the range of hills known as the Orange Mountains,